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| 10/643,179  | 08/18/2003  | Gregory C. Copeland  | TI-35129            | 3636             |
| 23494 7590 01/06/2009<br>TEXAS INSTRUMENTS INCORPORATED<br>P O BOX 655474, M/S 3999<br>DALLAS, TX 75265 |             |                      |                     |                  |
| EXAMINER  |             |                      |                     |                  |
| CORRIELUS, JEAN B   |             |                      |                     |                  |
| ART UNIT  |             | PAPER NUMBER         |                     |                  |
| 2611  |             |                      |                     |                  |
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

uspto@ti.com

### Office Action Summary

**Application No.**

10/643,179

**Applicant(s)**

COPELAND, GREGORY C.

**Examiner**

Jean B. Corrielus

**Art Unit**

2611

**Period for Reply** -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 28 September 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-38 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 34 is/are allowed.
- 6) ☒ Claim(s) 1-3, 10-29 and 35-38 is/are rejected.
- 7) ☒ Claim(s) 4-9 and 30-33 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/06)
- 4) ☐ Interview Summary (PTO-413)
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 101***

1. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

2. Claims 15-27 are rejected under 35 U.S.C. 101 as not falling within one of the four statutory categories of invention. While the claims recite a series of steps or acts to be performed, a statutory "process" under 35 U.S.C. 101 must (1) be tied to another statutory category (such as a particular apparatus), or (2) transform underlying subject matter (such as an article or material) to a different state or thing (Reference the May 15, 2008 memorandum issued by Deputy Commissioner for Patent Examining Policy, John J. Love, titled "Clarification of 'Processes' under 35 U.S.C. 101"). The instant claims neither transform underlying subject matter nor positively tie to another statutory category that accomplishes the claimed method steps, and therefore do not qualify as a statutory process. In the instant case, the process must (1) be tied to another statutory category (such as a particular apparatus).

### ***Claim Objections***

3. Claims 4-14 and 33 are objected to because of the following informalities: claim 4 recites "the cancellation circuit produces a cancellation pulse", in lines 4-5, such limitation suggest that "a cancellation circuit" is provided in addition to the "at least one of the plurality of peak detection and cancellation circuits", recited in lines 1-2, while in fact, "the cancellation circuit" is disclosed as part of the "at least one of the plurality of peak detection and cancellation circuits", recited in lines 1-2. Please correct.

As per claim 7, the claim recites ""the evaluation circuit is a binary search function". However, it is noted that "a binary search function" is not a "circuit". Was "uses" intended instead of "is"?

As per claim 8, with respect to the limitations "the cancellation circuit produces the cancellation pulse" recited in lines 15-16, and "at least one of the plurality of peak detection and cancellation circuits", recited in lines 12-13, see claim 4. In addition, claim 8, lines 35-36, recites "the interpolating circuit is a curve fitting estimate of values". However, it is noted that "a curve fitting estimate of values" is not a circuit. Was "produces" intended instead of "is"?

As per claim 10, with respect to the limitations "the cancellation circuit produces the cancellation pulse" recited in lines 15-16, and "at least one of the plurality of peak detection and cancellation circuits", recited in lines 12-13, see claim 8.

As per claim 33, see claim 7.

Note that any claim whose base claim is objected is likewise objected.

Appropriate correction is required.

***Claim Rejections - 35 USC § 112***

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 10-14, 17-27 and 35-38 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 10, recites "a plurality of cancellation pulse generators, (see last 2 lines) without any connection to the other components of the "at least one of the plurality of peak detection and cancellation circuits" and the claim fails also to recites the proper connection between the cancellation pulse generators.

Claim 11, line 9, "the filter generator" lacks of proper antecedent basis.

Claim 17, lines 3-4, "a first peak sample point" is vague and indefinite as there is an unclear antecedent in claim 15, line 4.

claim 18, line 4, it is unclear whether "the signal" refers to "the spectrum signal" in claim 15, line 3 or "the modulated signal" in claim 15, line 9.

Claim 22, line 14, it is unclear whether "the signal" refers to "the spectrum signal" in line 3 or "the modulated signal" in line 9.

Claim 23, line 14, it is unclear whether "the signal" refers to "the spectrum signal" in line 3 or "the modulated signal" in line 9.

As per claim 35, line 1, "the qualifier" lacks of proper antecedent basis.

Claim 36, recites "a plurality of cancellation pulse generators, (see lines 2-3) however the claim fails to recite the necessary connection between the cancellation pulse generators. in addition" the at least one of a plurality of peak detection and cancellation circuits" lacks of proper antecedent basis. Line 8, it is unclear as to which one of the "plurality of peak detection circuits" the limitation "peak detector circuit" refers to. Line 12, "the filter generator" lacks of proper antecedent basis.

Note that any claim whose base claim is rejected is likewise rejected.

***Claim Rejections - 35 USC § 102***

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

7. Claims 1, 15 and 28 are rejected under 35 U.S.C. 102(e) as being anticipated by Hunton US Patent No. 7,003,017.

As per claim 1, Hunton discloses an integrated circuit ( note fig. 6, element 122 ), comprising: a plurality of peak detection and cancellation circuits (note fig. 7) arranged in a sequence, a first peak detection and cancellation circuit (140) having an input coupled to receive a spread spectrum symbol stream ( $I(t)$ ), at least a second peak detection and cancellation circuit 142 having an input coupled to the output of a preceding peak detection and cancellation circuit in the sequence 140, each peak detection and cancellation circuit for applying an adjustment (cancellation pulse) (note output of circuit 152 to a first input of combiner 168) to a received symbol stream (note output of the delay 166, i.e. second input of combiner 168) responsive to detecting a peak amplitude in the received symbol stream exceeding a threshold (note col. 12, lines 35-43, and for presenting a peak adjusted symbol (compressed symbol stream) including the received symbol stream and adjustment (cancellation pulse) at its output

(note output 154 of combiner 168 that combines both the delayed stream and the adjustment).

As per claim 15, Hunton discloses a method comprising the steps of applying at least adjustment (one peak compression pulse) (note output of circuit 152, i.e., first input to combiner 168) to the spread spectrum signal (note output of delay device 166, i.e. second input to combiner 168) at a first peak sample point ( $t=0$ ), the magnitude of the signal at the first peak sample point exceeding a peak qualifying threshold (note col. 12, lines 35-43), to produce an output signal (peak-compressed symbol stream) (note output 154; repeating, at least once, the applying step on the peak-compressed symbol stream (note fig. 7, stage 142); amplifying an analog modulated signal (note output of amplifier 130) corresponding to a peak-compressed symbol stream from the last of the repeated applying steps to produce the signal 132 to be transmitted.

As per claim 28, see claim 1. In addition, Hunton teaches that the system is a base station system see col. 7, lines 27-28 and a plurality of coders (note fig.6, 110-114) for generating a spread spectrum signal over a plurality of channels; a D/A converter 128 for converting the adjusted (compressed) symbol to analog; and a modulation circuit (134 and 136) for producing a modulated signal, corresponding to the analog signal, at a carrier frequency and power amplifier 130 for amplifying the modulated signal prior to transmission.

***Claim Rejections - 35 USC § 103***

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 2, 16 and 29 rejected under 35 U.S.C. 103(a) as being unpatentable over Hunton et al in view of Uto et al US Patent No. 6,674,328.

As per claim 2, as applied to claim 1 above, Hunton et al teaches every feature of the claimed invention but does not teach the further limitation of an output limiter, coupled to the output of the last of the peak and cancellation circuits in the sequence for reducing residual peak amplitudes in the compressed symbol stream from the peak detection and cancellation circuits in the sequence. Uto et al teaches an output limiter 9 coupled to an output of a peak detector 7 and compensation stage 8 for limiting the offset compensation generated by the compensation circuit. Given that fact, it would have been obvious to one skill in the art to couple an output limiter to the output of the last of the peak and cancellation circuits in the sequence for reducing residual peak amplitudes in the compressed symbol stream from the peak detection and cancellation circuits in the sequence in order to meet DC bias condition of the positive phase input terminal and negative phase input terminal of the amplifier, see Uto col. 7, lines 61-64.

As per claims 16 and 29, respectively, see claim 2.

10. Claims 3 and 17 rejected under 35 U.S.C. 103(a) as being unpatentable over Hunton et al in view of Rakib et al US Patent No. 6,426,983.

As per claim 3, as applied to claim 1 above, Hunton et al teaches every feature of the claimed invention but does not teach the further limitation a digital down sampler for receiving the spread spectrum symbol stream and forwarding a subset of the symbols in



the spread spectrum symbol stream to the input of the first of the peak detection and cancellation circuits. Rakib et al teaches a digital downsampler 34 coupled to the input of the peak detection and cancellation circuit 36. Given that fact, it would have been obvious to one skill in the art to couple a digital downsampler for receiving the spread spectrum symbol stream and forwarding a subset of the symbols in the spread spectrum symbol stream to the input of the first of the peak detection and cancellation circuits in order to enhance the processing operation performed by the peak detector and canceller since less data would have been provided to the input of the detector and canceller.

As per claim 17, see claim 3.

***Allowable Subject Matter***

11. Claims 4-7, 9 and 30-33 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Note that the claims must be amended to overcome any objection set forth above.
12. Claim 8 must be amended to overcome any objection set forth above.
13. Claim 34 is allowed.
14. Claims 10-14 and 35-38 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action.

***Response to Arguments***

15. Applicant's arguments filed 9/28/07 have been fully considered but they are not persuasive. However, after further consideration, examiner notes that the primary

reference does not include limitation to "spread spectrum", as positively recited in the claims. Therefore, the previously rejection has been withdrawn in favor of a new ground of rejection. Accordingly, any point of argument is moot in view of the new ground of rejection and/or reformulation of the rejection as set forth above.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jean B. Corrielus whose telephone number is 571-272-3020. The examiner can normally be reached on Monday-Thursday from 9:30-3:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chieh Fan can be reached on 571-272-3042. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Jean B Corrielus/  
Primary Examiner  
Art Unit 2611